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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,515	12/15/2000	Ying-Wei Lin	D/A0647 XER 2 0391	9564

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EXAMINER

BAYAT, ALI

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/737,515

Applicant(s)

LIN ET AL.

Examiner

Ali Bayat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on (Respon on 5/20/04).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9 and 11-23 is/are rejected.
- 7) ☒ Claim(s) 5 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to amendment

1. Applicant's arguments, see paper number 7, filed 05/20/04, with respect to the rejection(s) of claim(s) 1-23 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Macleod et al. (U.S. 5,778,092) in view of Shirasawa et al. (U.S. 5,696,842).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-9 and 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Macleod et al. (U.S. 5,778,092) in view of Shirasawa et al. (U.S. 5,696,842).

In regard to claim 1, McLeod provides for a method for segmenting an image, the image comprising pixels and being represented by image data (Fig. 1 col. 4 lines 11-15), the method comprising steps of: obtaining image data (Fig. 1 element 101); inputting the image data into a first image segmentation module (Fig. 1 element 103, col. 4 lines 11-15); Generating first segmentation data by first image segmentation module (col. 4 lines 10-15, note steps 103-105); The first image segmentation data representing at least one first characteristic of the image data (col. 4 lines 10-15, note steps 103-105, which corresponds to foreground map, background map and selector map, respectively);

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McLeod does not specifically provide for inputting the image data into a second image segmentation module and integrating the first image segmentation data with the second image segmentation data to obtain modified image data. Shirasaw provides for second image segmentation (Fig.1 element 4 col.4 lines 40-45); generating second image segmentation data by the second image segmentation module (Fig.1 element 4 col.4 lines 40-45, note black/white line block, which corresponds to text image data), the second image segmentation data representing at least one second characteristic of image data (Fig.1 element 4 col.4 lines 40-45, note black/white line block, which corresponds to text image data); and integrating the first image segmentation data (Fig.1 element 103, col.4 lines 11-15) with the second image segmentation data (Fig.1 element 4 col.4 lines 40-45, note black/white line block, which corresponds to text image data) to obtain modified image data (Fig.1 elements 6-8, which provide for compressed image data). The prior art of MacLeod and Shirasaw are combinable because they are from same field of endeavor (image segmentation). At time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Shirasaw (Fig.1 element 4 col.4 lines 40-45, note black/white line block, which corresponds to text image data), with the system and method of MacLeod, because the invention of Shirasaw provides for an image processing system in which an image is read out from a color document, the image is correctly separated into a black-and-white line region and a picture region, further bi-level image data is encoded via QM-coder and the picture region is encoded via an

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ADCT encoding process in order to achieve a higher compression rate and improve the quality of a compressed image col.2 lines 10-20.

With regard to claims 2 and 7, McLeod provides for the method, wherein the inputting of the image data to the first image segmentation module and the inputting the image data to the second image segmentation module are accomplished concurrently (Fig.1 elements 103 and 104, respectively).

As to claims 3,8 and 19, McLeod provides for a method, wherein the generating of the first image segmentation data comprises generating first characteristic data representing a background layer, a selector layer and a foreground layer of the image data (Fig.1 elements 103-105).

In regard to claim 4, McLeod does not provide for a method, wherein the generating of the second image segmentation data comprises generating second characteristic data representing rendering hints. However Shirasawa teaches the above limitation (Fig.1 element 4, note BI-LEVEL processor, which process the text image data).

With regard to claim 6. See claim 1 above. It provides similar limitations as claim 6. Hence it is similarly analyzed and rejected.

As to claims 11, 12,13 and 15. See claim 1 above. They recite similar limitations as claim 1 above. Hence they are similarly analyzed and rejected.

In regard to claim 14, McLeod provides for a system, wherein the first segmentation module comprises and object based image segmentation module (Fig.1

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elements 103-105, col.4 lines 33-42, note background which corresponds to continuous-tone pictures and foreground which corresponds to text).

With regard to claim 16. See claim 1 above. It recites similar limitations as claim 16. Except for a scanner (Fig.26 element 2608), a storage module (Fig.26 element 2605), a printer (Fig.26 element 2609) and compression and decompression module (Fig. 25a elements 2501-2502). Hence it is similarly analyzed and rejected.

As to claim 22, McLeod provides for a system, further comprising a third image segmentation module operative to generate third image segmentation data (Fig.1 element 105, col.4 lines 42-53).

In regard to claim 23, McLeod provides for a system, wherein the combining module is operative to combine the third image segmentation data (Fig.1 element 105) with the first (Fig.1 element 103) and second image segmentation data (Fig.1 element 104).

With regard to claim 21, McLeod provides for a system, wherein the first and second segmentation data comprises layers whereby an absence of a selected layer establishes a default position for a characteristic represented by the selected layer. The examiner takes official notice, the defaulting well known in the art.

Objected Claims

3. Claims 5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent 5,586,200 to Devaney et al. is cited for segmentation based image compression system.

U.S. patent 6,625,333 to Wang et al. is cited for method for temporal interpolation of an image sequence using object-based image analysis.

U.S. patent 5,915,044 to Gardos et al. is cited for encoding video images using foreground/background segmentation.


Contact Information


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 703-306-5915. The examiner can normally be reached on M-Thur 9:00-7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-3085246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ali Bayat 
Patent examiner
Group Art Unit 2625
8/13/04


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